

WEEKLY EDITION

OF THE



PUBLISHED BY

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☞ We regret to learn that Mr. J. E. Pond, Jr., Foxboro, Mass., is confined to his bed by rheumatism and heart disease. He has been ill for two or three months.

☞ Another new bee-paper comes to our desk; it is called *Tidsskrift for biskjotsel*, and is edited by Mr. Ivar S. Young, and published at Christiania, Norway. We cannot read a word in it, but as Mr. Young has been a subscriber for the AMERICAN BEE JOURNAL for years, we expect it is "up with the times."

☞ We have received a pamphlet of 44 pages from Mr. A. I. Root, entitled "The A B C of Potato Culture; how to grow them in the largest quantity, and of the finest quality, with the least expenditure of time and labor." It is illustrated with 20 engravings, and is nicely printed. Mr. Root is the publisher of it, and says: "It is written by Mr. T. B. Terry, the successful farmer and potato-grower of the State of Ohio. Mr. Terry is employed most of the winters in giving lectures before farmers' institutes, and he is always authority on any thing connected with agriculture. The book is not only a valuable one to potato-growers, but a great part of it applies to the management of almost any crop on the farm, especially to the preparation of the soil, manures, etc." We can furnish it at 40 cents, post-paid.

☞ It is now high time to send orders for everything needed in the apiary for the coming season, so as to have it on the spot and all ready for use when wanted.

Bee-Keeping in Tunis.

Mr. Frank Benton is in Tunis, Africa, and gives the following account of the establishment of a "model apiary" there, and describes it, as well as the bees, as follows:

The movable-comb hives were not all in place, and the colonies in suitable condition to take full advantage of the first yield of honey—that from wild rosemary blossoms—but some surplus has been obtained and many combs have been constructed, so that when the jujube blossoms open, next month, an excellent harvest may be safely counted upon. The rosemary yields wonderfully, and as thousands of acres are covered with its pale, blue blossoms, during January, February and March, it will be a great dependence.

A medium colony transferred on the last day of February, produced over 40 lbs. of extracted honey, besides building out several frames of foundation, in 20 days. The rosemary is the plant from which the famous Narbonne honey of France is gathered, and the Kassartyr honey is most excellent in quality. Some of it is quite transparent, very thick, and possesses a pleasing aromatic taste. Altogether the proprietors of "The Kassartyr Apiary" have every reason to feel encouraged in the work which they have undertaken, and it has already begun to have its influence, as two other apiaries on the same plan are soon to be established in the province, and several enterprising parties are talking of introducing the culture of bees on their estates.

A few words about the bees of Tunis: They are dark—even darker than our common black bees—but, strange to say, they possess nearly the qualities of Syrian bees, and show, except in color, very little resemblance to the black or German bees. Like Cyprians and Syrians, they are somewhat smaller-bodied than are the common bees, and they adhere very well to the combs when handled, but can be shaken off readily. They are also active and energetic workers; but, unlike the Cyprians and Syrians, they are liable at times to fly at one and sting him when he approaches the apiary. They bear smoke rather better than other Oriental races. The queens show a tinge of bronze color and are very prolific. On the whole, Tunisian bees are not to be dispised, even if they are true Africans in color.

I have been wondering how this race of bees got here, and have only been able to offer the following explanation: Early Greek colonists must have brought Hymettus bees with them. History might lead us to this conclusion, and it is indicated by their color, qualities, etc., and particularly their disposition to submit to smoke, as well as by the fact that all other Mediterranean countries from which bees might have been brought here at an early date have, as their general types, yellow races of bees.

Selling Honey.

The following, which we find in the *Stock Breeder*, shows how a demand for honey can be created in any locality by a little exertion. A suspicious customer, at a Bee and Honey Show, introduces the conversation thus, pointing to a nice jar of honey:

"That looks very nice indeed. How did you fix it to make it look so nice?"

"It is not 'fixed' at all, sir, in the sense you mean. Our entire crop of honey is just like this; in fact, this is but a fair sample of extracted honey as produced to-day all over the country; different locality making difference in flavor in some instances, on account of the different kind of flowers on which the bees work. Take a jar along with you."

"No, thanks; I never eat honey; it makes me sick."

"Well, take a couple of these little jars to the children."

Four weeks later.

"Say, have you any more honey like that you gave me at the fair?"

"Yes, sir, plenty of it."

"Bring me down 2 or 3 pounds; the children like it quite well."

Of course we took him the latter amount. Some time later we took him another 3-lb. jar. To-day he writes: "I had thought myself proof against wiles of any bee or any honey man, but I succumb; those little homeopathic jars of honey did the business. The children cry for it, and—well it is not bad to put on warm cakes. Please send me 50 pounds."

☞ A Scotch pamphlet, entitled "An Essay on Bees," by Wm. Thomson, is on our desk. It is published at 80 Gordon St., Glasgow, Scotland, and may be obtained of R. J. Bennett Esq., secretary of the Scotch Apiarian Society. It contains 84 pages and 25 illustrations. The author has for years been known as a prominent writer on apiculture in the British periodicals, his *nom de plume* being "A Lanarkshire Bee-Keeper." It is written in his usual interesting style.

☞ After July 1, 1885, the weight of a letter which can be sent for 2 cents, will be increased from one-half ounce to anything less than one ounce.

☞ Honey to the value of about \$27,000 was imported into Great Britain during the month of February, 1885.

Catalogues for 1885.—We have received the following:

Rev. Wm. Ballantine, Sago, O.
G. R. Tyrrell, Laporte, Ind.
J. W. Newlove, Columbus, O.
W. C. R. Kemp, Orleans, Ind.
O. Judd Co.'s Spring Catalogue of publications, 851 Broadway, New York.

QUESTIONS

WITH

REPLIES by Prominent Apirists.

Bees Starving in Early Spring.

Query, No. 54.—What is the best way to guard against bees starving before feeding can be done in the spring? I practice laying on the frames cakes of well-kneaded honey and pulverized sugar.—Ontario.

G. M. DOOLITTLE remarks thus: "The plan given is as good as any."

W. Z. HUTCHINSON says: "There is no better way that I know of for guarding against starving bees in the spring, than by laying soft candy over the combs."

PROF. A. J. COOK answers thus: "The best answer is given in the question."

JAMES HEDDON remarks thus: "If the detail of your plan works to suit you, you need no better food. My plan is to know that each colony has enough food until it can fly, and then feed liquid food from the top, if a colony should be short."

DR. C. C. MILLER replies thus: "A section of honey laid on the frames is good; also a frame of sealed honey or a wide frame of sections put next to the cluster."

Bees Affected with Moisture.

Query, No. 55.—Does moisture affect bees filled with sugar syrup in the same manner as those filled with honey? If not, please explain the difference.—W. C. S.

PROF. A. J. COOK answers thus: "I do not think that there is any difference."

G. M. DOOLITTLE remarks: "From the present winter's experience, I think that bees winter best in a cellar having a moist—yes, almost wet—atmosphere. I can see no difference between those having honey or sugar syrup as regards the effect of moisture."

JAMES HEDDON answers as follows: "I have never perceived any difference. Moisture is no part of my fear in the wintering problem. I have colonies now in a new, damp cellar with mold on the combs, honey-boards and alighting-boards, the underside of the cover dripping with water, and water running from the entrances of some of them, and the bees are in perfect health, and their bodies are as slim as in summer. They have nothing but sugar syrup as food."

DR. G. L. TINKER says: "It certainly does. The removal of the thin watery stores from a colony of bees will be considered one of the very essential expedients hereafter in the fall preparation of bees. The injurious effects of cider, for instance, is not due to acids, but to the fact that it is collected so late in the season,

and when the temperature is so low that the evaporation of the surplus water is impossible. The conservation of the heat of a colony of bees in winter has more to do with the state of moisture in a hive, and its prevention, than the character of the stores, although thin stores has much to do with it."

Old and New Bee-Hives.

Query, No. 56.—Will bees stand the winter as well and be as healthy in hives which are several years old, as in new hives?—Iowa.

PROF. A. J. COOK says "yes."

W. Z. HUTCHINSON replies thus: "They will."

DADANT & SON answer thus: "Yes, undoubtedly; if the hives are substantial."

DR. C. C. MILLER says "yes."

DR. G. L. TINKER remarks thus: "Old bee-hives, when properly prepared for a colony of bees, are as good as new ones to winter bees in."

G. M. DOOLITTLE answers thus: "I prefer old combs for wintering bees. The hives, whether new or old, make no difference, provided both are equally tight."

JAMES HEDDON answers as follows: "Yes. A hive properly preserved and taken care of, should show no signs of wear or decay after 4 or 5 year's use."

Comb Foundation and Beeswax.

Query, No. 57.—Owing to the increased demand for pure beeswax, and the consequent high price which good, pure comb foundation must command, what price can one afford to pay for the latter rather than do without it for use in both brood-frames and sections?—Franklin Co., Mass.

G. M. DOOLITTLE answers thus: "I do not use it in brood-frames, and would not, except in cases where I wished to prevent drone-comb, so I state no price. For sections, say 50 cts. per lb."

PROF. A. J. COOK says: "As much as we shall have to for years yet."










G. W. DEMAREE replies as follows: "I cannot make a fair profit by paying over 40 cts. per lb. for foundation, except for starters; I can pay \$1.00 per lb. for this purpose."

DR. C. C. MILLER replies thus: "It depends upon the price of honey. At present I should hardly want to dispense with it at \$1.00 per lb."

JAMES HEDDON answers as follows: "I can afford to pay \$2.00 or \$3.00 per lb. for thin comb foundation to be used in narrow strips as guides in brood-frames and sections. At the present prices I still practice, and believe it profitable, to use it in full sheets above and below. How much higher price the latter use would warrant, we had better leave to future experiment."

CORRESPONDENCE

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark  indicates that the apiarist is located near the centre of the State named:  north of the centre;  south;  east;  west; and this  northeast;  northwest;  southeast; and  southwest of the centre of the State mentioned.

For the American Bee Journal

Honey Oozing from the Combs.

16—G. M. DOOLITTLE, (40—80).

"Why does honey ooze out of the comb after it is taken from the hive and stored away?" is a question that is often asked, and one which has confronted nearly every comb-honey producer sooner or later. Some seem to suppose that the cause of this state of affairs is that the bees do not thoroughly ripen the honey before capping it. A little thought must show the fallacy of this, for whether ripened or not, the honey can only ooze from the cells after being capped, on account of a larger bulk of liquid being in the cell afterward than there was at the time the bees sealed the cell. This can come only from one source, which is always brought about by either cool, damp weather, or a non-circulation of air, or both. Honey only swells as it becomes damp, and the first that will be seen of that dampness will be in the unsealed cells, where the honey will have become so thin that it will stand out beyond the cells, or, in other words, the cells will be heaping full. If the dampness remains, the sealed honey will soon become transparent, while the honey from the unsealed cells will commence to run out, daubing everything below it, and eventually, if the cause is not removed, the cappings of the cells will burst, and the whole will become a sickening, souring mass.

While in New York City, I once saw several hundred pounds of such stuff which was once as nice comb honey as could be produced, but it had become unsightly and spoiled by being stored in a cool, damp cellar. The cappings to the white combs were ruptured with the honey oozing out of the cells, to such a degree that the cases were all soaked with it, and which, with large puddles on the floor, gave off a sickening smell which, with the unsightly appearance, caused one to think of honey only as something to be loathed. The commission merchant asked me what was the matter with the honey. I told him that the damp, cool cellar was what was the matter, but he would not believe it until I caused him to confess that the honey was all right before it

was placed in the cellar 6 or 8 weeks previous.

When I first commenced keeping bees, I stored my honey in a tight room on the north side of the house, where it usually remained from 4 to 6 weeks before crating for market, and some of the first boxes remained much longer than this. In crating this honey, I always found the centre and back side of the pile watery and transparent in appearance. As that which was stored first was always the worst, I thought it must be owing to that being the poorest or least ripened honey, until one year I chanced to place this early honey by itself in a warm, airy room, when, to my surprise, I found upon crating it, that this first honey had kept perfectly, while the later honey stored in the old room was as watery as ever. This gave me the clue to the whole thing, so when I built my shop, I located my honey-room in the southwest corner of the building, and painted the south and west sides a dark color to draw the heat from the midday and afternoon sun. On two sides of this room I fixed a platform one foot from the floor, so arranged that the sections rested on the edges of strips $1\frac{1}{2} \times 3$ inches, which were long enough to hold 18 sections. The sections were often piled on these strips until they were 12 to 14 high, and 20 wide, making a cube, as it were, containing from 3 to 5 thousand pounds of honey on either side of the room, yet the whole was so piled that the air could circulate between each and every section.

During the afternoons of hot August and September days, the temperature of this room would be raised to 100° and above, which would warm the piles of honey to nearly that degree of heat, and as this large body of honey once heated retained the same for a great length of time, the temperature in this room would be from 85° to 90° at 6 o'clock the next morning, when it was as low as 40° to 60° outside. By this means the honey was being ripened each day, and that in the unsealed cells getting thicker and thicker, when by Sept. 10, or after being in the room from 4 to 6 weeks, the sections could be tipped over, or handled as carelessly as I pleased without any honey running from the few uncapped cells, which the bees often leave around the edges of the boxes. By leaving the door and window open on hot, windy days, so as to cause the air to circulate freely through the pile, I found that it took less time to thoroughly ripen the honey than it did where all was kept closed. In doing this, of course it is necessary to have screens up, so as to keep flies and bees out of the honey-room.

If I wish to keep honey so late in the fall that the rays of the sun fail to keep the room sufficiently hot, or from cool, cloudy weather the temperature of the room falls below 85°, I place an oil-stove in it, and by regulating the flame to suit the circumstances, a temperature of 90° to 95° of heat is always maintained. In this way the honey is in perfect condition

when sent to market, in which shape it will stand much abuse before it will begin to ooze from the cells. At the late convention of the Northeastern Bee-Keepers' Association, President L. C. Root said that "what we now wanted to strive for, was not to see how large a quantity of honey we could produce, but to see how good a quality we could get, and look well to the enticing shape in which it was placed upon the market." In this advice I think we have the key-note in regard to establishing a staple market for our production in the future.

Borodino, © N. Y.

For the American Bee Journal.

Those Interesting Experiments.

W. N. HOWARD.

The article by Mr. Doolittle on page 197, will doubtless be hailed by the advocates of the non-pollen theory, with expressions of the greatest enthusiasm; and as Mr. D. is an expert apiarist, a man of keen perception, and generally sound in his reasoning, his conclusions from the result of his experiments there given, will have weight with many, and all will be impressed with the fact, that these experiments were made and given for the purpose of shedding light upon this much-vexed question of wintering bees safely; and they will also serve to show the different conclusions which "many men of many minds" will derive from the same series of facts.

The colony Mr. D. describes was, as he supposed, entirely without pollen, and had not scientific investigation proved it otherwise, he, without doubt, would have staked his reputation as an apiarist, that they were without a particle of pollen, and it clearly shows how easy it is for even the most expert to be mistaken. It is not impossible, not even improbable, that from the time Mr. D. commenced to feed them sugar syrup, that they did not gather pollen, and place it in the combs, and syrup upon it so that it was not visible at the time. Mr. D. looked them over, about Oct. 25, 1884, for he states that other colonies did gather pollen during this period, and why not this?

Mr. Doolittle, Prof. Cook, Mr. A. I. Root, and other eminent authorities, have been positive for years, that brood could only be reared when bees had access to pollen. Mr. D. found young bees and brood in the hive at the time the colony ceased to exist. This fact alone would tend to show that they had pollen; then of the 8 or 10 bees examined first, 2 were found to contain an abundance of pollen. Prof. Cook found pollen in almost every cell of the comb which he examined, and says: "Your bees which are the fullest, or the most turgid—are bloated like—have pollen in almost every case." These are the facts, and what inference shall we draw from them? Mr. Doolittle cannot see wherein the pollen was at fault, simply because the liquid portions of their food was sugar syrup. Reason

would point to pollen as the cause of their death, as no bloated bees were found that did not contain pollen. Where all other conditions are such as to be auxiliary to the cause, it may not take any great amount of pollen to produce the effect, as this case shows.

It is, I believe, acknowledged that the excrement in all cases of genuine bee-diarrhea, contains solid particles of brownish-looking matter. Now, when a case like this is developed, and investigation shows no traces of pollen in the intestines of the bees, their excrement, or the combs, then it will be time to assert that pollen is not a cause of bee-diarrhea. Suppose a healthy man be taken suddenly ill and dies; a post-mortem examination reveals the presence of arsenic, and a verdict should be rendered, "came to his death from the influence of arsenic." It would be universally accepted. In this case Mr. D. concludes that although pollen was found in the intestines of the bees and in the combs, it is impossible for pollen to have been the prime cause of their diarrhea, because he felt sure that they had no pollen at the time they were prepared for winter.

How the facts of this case can annihilate the pollen theory, I cannot see, as nothing new is shown except that scientific investigation will reveal the presence of pollen in places where the unaided eye might see none, and that a good cellar is the best and safest place in which to winter bees, as, doubtless, if this colony had been placed in a cellar, it would have wintered in good condition.

Derby, 3 Vt.

For the American Bee Journal.

Over-Production of Honey.

J. E. POND, JR.

Should bee-keeping as an occupation be encouraged or discouraged? What are the facts in regard to the honey-supply to day? Take all the honey that is gathered, whether put upon the market or not, and how much per capita would it give to those who not only would like a supply could they obtain it, but are amply able and willing to pay a fair price for a known pure article? I leave the answer to the readers generally; we all know the quantity would be very small.

Over-production has nothing to do with the matter; were ten times the quantity produced it would be consumed, if the consumer could find it. Right here is the trouble: The large producer floods some city market with his produce; that particular market is over-supplied as a matter of course. In the bee-papers we see reports in regard to honey sales from only 5 or 6 of them. Why is this? Are there no other spots or places in the wide extent of our land where honey can be sold? I do not pretend to know about the South and West, but right here in New England, no honey is being offered for sale, where if the attempt were made, a large trade could be

worked up in a short time. Our country towns and smaller cities are wholly unsupplied, and I have no doubt that the South and West is in the same condition.

Producers, instead of finding fault with honorable competition, should exert themselves the more to create a demand. This same old cry has been raised ever since the world began. When the attempt was first made to introduce labor-saving machinery, we all know what a hue and cry was made against it. The same cry was made then as now, "We shall get so large a supply that we can't sell at remunerative prices, and we shall also cut wages down so low that the poor laboring-man will surely starve." What has been the result? We all know well, and no one now wishes to go back to the olden time before the days of mowing machines, reapers, sewing machines, etc. So with the production of honey. Improvements in hives and appliances make honey-gathering an easier matter than formerly, and of course make the cost of production less also. As the country opens up and the population increases, the demand will increase also, and if our producers would only take advantage of their opportunities and branch out a little more—offer their goods where none are now to be found, and do in their business as other business men do in theirs, there would soon arise such a demand that it would take a large increase of production to supply it.

Bee-keepers, as a rule, are poor salesmen. They can produce honey and manage bees successfully, but not having been educated as salesmen, they are obliged to leave the disposing of their products to others. Some of these days they will awake to the fact that they are at the mercy of the middle-men, and then they will organize, and by virtue of such organization, succeed in gaining their rights, and maintaining them also.

Foxboro, C. Mass.

For the American Bee Journal.

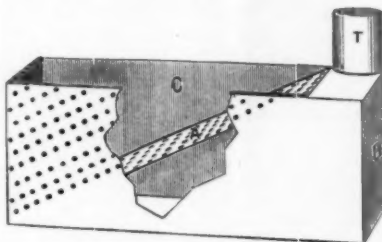
Queen-Excluders and Drone-Traps.

JAMES HEDDON.

On page 105 is a clear and logical article on the use of drone-traps, a perusal of which reminded me of something I wish to say. Ever since I first read Mr. Langstroth's work (some 16 years ago), I have had an eye upon any advantages that might be gained by the use of bee-passages, of such size as would in certain desired ways, separate the workers from the larger drones and queens. As stated in my article on page 21 of the BEE JOURNAL for 1884, about 12 years ago I gave the subject a thorough investigation, using mainly the non-swarming attachment here illustrated. The advantages gained by the angling partition A, are of very great value, or I made a great mistake in my conclusions, drawn from experiments, and I would to-day use no arrangement not possessing this feature. About the time I was using

the double-wire-cloth-cone fly-trap mania swept over the country. A lady in South Bend, Ind., invented a very good trap, and a non-swarming attachment. Arguments were not sufficient to show the impracticability of both, but time has fully satisfied bee-keepers; both are now among the things of the past, and almost forgotten.

The first attachment I ever made was like that illustrated, except that the holes were a trifle larger than an empty worker required. When I had this in use, and the drones were buzzing in it, as mentioned in my former article, I began to contrive to get the entrance clear of them, and yet not let them go. If the illustration is viewed at the left end, it will be seen that all the upper side of the box that is within the partition A, is perforated the same as the partition. Just there I cut a large round hole, and over it I put the two cones of the fly-trap. This took the drones, and would likely have caught the queen also if any swarm had issued while it was on the



hive. Notice how nearly this arrangement embraced all (and more) of the principles of Mr. Alley's new trap.

On page 201 (1884), one can see where Mr. Longmate may have borrowed this same combination from Mr. Alley and myself.

During the seasons of 1883 and 1884, I experimented with 10 to 40 queen-excluding honey-boards, and I have so far not satisfied myself that any queen and drone excluding passage-ways are the best practical methods of obtaining the results sought, neither for ridding our apiaries of unwanted drones, for keeping the queen from the surplus receptacles, or for preventing her leading away swarms. I have given the matter much thought, and experiment, and yet I am a "doubting Thomas." I think that Father Langstroth and others studied it, and experimented considerably, yet no general use has ever been made of the fact of the difference in the size of our drone, queen and worker bees, except to distinguish them at sight. I do not contend that it cannot be done, but I do contend that the arguments are rather against it now, at least they are to me. If I am wrong, and Mr. Alley is right, the future will so decide it.

The second point which I wish to make is, does my old device invalidate Mr. Alley's claims? I say most emphatically, no! If Mr. Alley's trap is useless, the future actions of bee-keepers will invalidate the claim, trap and all. If it is worthless, what do we care further about it? If it is useful, and as necessary as he thinks

it is, by what moral or common-sense right do my twelve-year-old failures invalidate his last year's successes? The "monopoly" of granting a patentee the results of his own labor, the exclusive use of what never existed until he made it, is secured to him by the common consent of every civilized nation, in exchange for the good these discoverers do their fellow men, by their inventions. What good did my quiet failures do anyone? All honest men are getting tired of hearing the cry, "Oh, I made that years ago," following the heels of every recognized valuable invention. Most of these cries are falsehoods; those that are not, are failures.

I believe that the United States courts, setting upon patent interferences, declare that it is not enough to prove prior invention of any implement, but prior improvement must also be discovered. Improvements are not allowed to die, and these facts prevent dragging up dead failures, with which to invalidate living, progressive improvements. Swearing to falsehoods is becoming so common that the above system of evidence has become a necessity. The court now asks these questions: "Mr. B. if you really did invent or discover this principle prior to the date claimed by Mr. A., why did you not use it, and seek to receive remuneration for so great and valuable a discovery? Why did you delay such seeking until Mr. A. had made the principle popular and in demand? The people certainly ought to pay for the benefits they are receiving, to Mr. A., and not to you. Your testimony has the coloring of falsehood. If you ever discovered the implement, you certainly did not discover its worth, or you would have sought its easy security then, rather than its difficult possession now."

Dowagiac, 9 Mich.

Read at the late Bee-Keepers' Congress.

Honey Resources of Napa Co., Calif.

J. D. ENAS.

To give an idea of bee-keeping in this section, would not begin to represent with fairness the interests of bee-keepers throughout the State. Napa county does the best in what is called a "dry season." Water is plentiful at all seasons, and a "wet season" is not favorable for the development of this county, although Napa valley is called "the garden-spot of California." Napa valley has been principally devoted to the raising of grain; of late years, fruit has taken an important part. Vineyards are springing up like magic, and grapes, fruit, and the wine interest will eventually be the principal business in this valley. The climate varies according to locality; frosts affect some parts of the county, while on the other hand, a very short distance away, fruits are hardly known, while the localities are within sight of each other. The foot-hills are, on that account, becoming more sought after. Spots having an elevation of from 700 to 1,000 feet, are often entirely

exempt from frost, or at least frosts are of very rare occurrence in such places. While fruits yield largely in the valley, and are of good size, the fruits of the foot-hills have more flavor, and have better keeping-qualities.

There are really no bee-keepers in this county who make a specialty of bee-keeping or honey-producing. There are a very few who keep more than a few colonies for home use. The largest bee-keeper in the valley, last spring, had about 160 colonies. I learned through the papers, that he produced 2 tons of extracted, and half a ton of comb honey. I saw some of his comb honey, but it was not a No. 1 article. It was in rough, split, red-wood frames, 8 inches deep, and about 15 inches long, of a dingy color, and would sell nowhere except about home, and very slowly there. He cannot produce a No. 1 article, and so he sells his honey just as soon as it is out of the hive, at any price that he can command. Others have from 10 to 20 colonies in all sorts of hives, kegs and boxes, but seldom get honey enough for home use.

Napa valley in fruit-blossom time, from January, when the almond and peach trees are in bloom, until May or June 1, through blackberry bloom, yields a good quality of honey. A scientific bee-man can, in a good season, produce a fair crop of honey, but it will require skill and everything in good order to secure it. After Jan. 1, the thistle and the tar-weed bloom, and all honey left uncapped in the hive then, will get tainted with a bitter and very disagreeable flavor.

In the foot-hill region there is more or less blue-sage, and the honey is much finer in flavor; in fact, I think we have the finest flavored honey that I have ever tasted in this State. Honey in the northern part of the State has a more decided flavor than that produced in the southern part, while at the extreme south, the honey is more continuous, and of more variety. I do not know of any white-sage that grows in this section, while in some parts of the southern counties, white-sage is their main dependence, and it comes at the time when it is most needed.

I am situated on the foot-hills on the east side of Napa valley, about 5 miles north from Napa city, and 1 mile southeast of the famous Napa Soda Springs. There are thousands of acres of blue-sage growing where nothing else will grow, on a sort of lava formation, apparently on the bare rock in many places. It blooms from January until June, unless checked by frost, or what is as bad here, a north wind which dries up vegetation, and even animal creation. It is deadly in its effects, and everything feels it, as it is blighting in its nature. After the blue-sage comes the yerba santa, or mountain balsam, as it is called, which yields good honey of a very thick body. There is a strong balsam in the yerba santa. Its effects are perceived in the honey, and it has medicinal qualities. This brings the flow to about the middle of June, when we have a drought of

honey-flow until corn tassels, about the latter part of July or August; then bees breed some, and sometimes swarm; but they will need all their stores, or if the honey has been extracted close, they will have to be fed, though some bee-keepers prefer to let them take their chances.

I have not mentioned the fruit-bloom which begins in January and lasts until the middle of May; nor the profusion of wild flowers which bloom from the time of the first rain until the "dry season." In September we have goldenrod to begin with, and as the different varieties of grapes ripen, quails, linnets, and yellow-jackets cut the grape-skins, when the bees make a living and store some besides, producing a dark-colored but very palatable quality of honey. The early rains cause many of the compact bunches of grapes to rot, which gives the bees another chance to add to their stores before winter fairly sets in.

Here bees stop breeding in October or November. Generally in November I look through my hives, take what surplus I think the bees can spare, reduce them to about six combs in the centre of the hive, and place division-boards at the outside of the combs. I then put on the cap with 3 or 4 empty grain-sacks on top of the frames tucked in closely, and leave them on the summer stands until January, when I examine them to see if any need stores, when, if they do, I give them some, or replace the wet sacks with dry ones, in case some should get wet. I had to place rocks on all my hive-covers to keep them from being blown away during gales. I generally save enough combs of sealed honey for feeding purposes; otherwise, I use a feeder.

Although some Californian bee-keepers have done very well during the past season, those in all parts of the State did not fare alike. I worked my apiary mostly for rearing queens, but I lost by late, cold, spring rains, over 200 of my earliest queens. The rains were not only cold and late, but long continued, so that it was risky to open the hives. I got no first-class comb honey, and but 2,000 pounds of a good quality of extracted, which I reserved for my home trade. I put it in one and two-pound glass jars, and two, five and ten-pound tin cans, with neat labels on them. I sell all of my honey in Napa City, at from 8 to 12½ cents per pound.

The last three years were very peculiar ones for honey and bees. The season of 1882 was promising. Bees did very well, and honey came in lively until May 13 or 18. About that time Napa county had a cold wave, which killed the bloom throughout nearly the whole county, very few places having escaped. My place had always been considered exempt from frost. I was suckering vines before breakfast, and my hands became numb from cold; after breakfast I resumed my work, and I noticed a few vines black and drooping, and presently a few more. I was surprised at first, but I soon saw, as the sun got higher, more vines drooping. In less time than I could describe it, the whole

vineyard was wilted. My hopes sunk low—"killed by frost." I found that it was universal, and so I made the best of it. A little later I found young bees crawling out from the hives, with wings not fully developed. At this time I did not fully understand it, but since, I conceived the idea that as the hives were full of young bees, in all stages, at the time of the freeze, the old bees perished while seeking for supplies, and being cut off suddenly, the young bees were sealed up with a scant supply, and could not develop before hatching; in consequence, the yard was covered with dead bees, and in many hives they became so reduced that only a very few bees were left with the queen on the combs, and occasionally I found the queen alone.

From 60 colonies in the spring, I increased my apiary to 85, reduced them to 24 in the fall, and begun with 20 weak colonies the following spring. In 1883, I bought 15 colonies of blacks, and increased them to 20 strong ones in the spring. I increased my number of colonies to about 95 in June, when a "norther" came and blighted everything. Fruit that looked promising before the "norther" came, lost all of its bloom. Grapes that promised several tons per acre, had less than 1,000 pounds; of course bee-feed was cut off. Flowers yielded but a scanty supply. Bees barely secured a living. I got 1,000 pounds of surplus honey, and fed nearly 400 pounds of it back, which induced robbing, and I had a fearful time until I got a barrel of sugar and fed with that, which stopped the robbing. Out of 85 colonies, 84 were robbing. Queens from the East came late, and it was hard work to save them, but I succeeded in saving enough to preserve my breeding queens. I found one colony very quiet during all the excitement. After order was restored, and I felt safe, I opened the hive late in the afternoon, and I found the body of the hive full of bees, brood and stores, and the top tier of sections ready to take off.

I built up several colonies with the combs and bees, and marked that colony for breeding, as the bees were quiet and well marked for pure Italians. I am sorry to state that I lost the queen and all her queen-cells, owing to the long wet spells. By selling and reducing my number of colonies, I brought about 24 colonies through the spring of 1884, and increased them to 100. I had 2,000 pounds of No. 1 extracted honey, mostly blue-sage, but no comb honey, and the bees were all healthy and in good condition. I obtained 90 pounds of beeswax from refuse combs. I use foundation, and I think it profitable. I save all combs in frames, sulphur them occasionally to kill moths, melt all imperfect ones into wax and replace them with foundation. I use no wires in the foundation.

To make bees profitable in this county, the business should be connected with fruit-raising, or some other light business. Poultry might do for some, but I would prefer fruit and using a drier. One cannot de-

pend alone on bees (I refer only to my own section). After the honey season is ended, one can, with a portable drier, go into many orchards or vineyards and go into the drying business on any terms he can make; the bees will not interfere. In case one goes into the poultry business, he can be busy while the bees are breeding up, and manage to have the poultry so that they will not need the care just as the bees want the most; and when the bees are able to take care of themselves, or do not need much care, then the chickens can be attended to. One thing that this county needs is a law or laws in regard to keeping diseased bees.

Napa City, Cal.

For the American Bee Journal.

Wintering Bees, etc.

REV. G. T. WILLIS.

To say that sad disaster has come to the "blessed bees" will express it all. Last fall I packed 38 colonies in straw, as I have for the last seven years. I always have had good success in wintering until this winter, but on Feb. 27 I examined them and found 15 colonies dead. The rest I fixed up in good shape for spring, hoping that they would weather the storm. On Feb. 28, I left home and returned on March 30, to find only 9 colonies alive, and 4 of those with only a queen and a handful of bees.

I have been working hard for the last 7 years to build up an apiary so that I might make something to add to my small salary, in order that we would not have to practice the most rigid economy in our domestic affairs; but now my hopes are blighted, at least for the present. But as I have plenty of hives and combs, I shall try what I can do towards building up again, though it is rather slow work with me, as I am away from home a great deal. My bees evidently died from diarrhea.

I have been following very closely the discussion on the "pollen theory," and I am inclined to believe there is something in it; at least when we have such winters as that of 1884-85, when the bees cannot fly to void their feces for two or three months. In nearly all the colonies that died I found brood capped over. I followed the advice of W. F. Clarke and others, and kept the snow shoveled away from the entrances, but when we have another such a winter as the past, I think I shall leave them buried under the snow.

My way of introducing queens is to take out a frame with the bees adhering to it, and shake them down in front of the hive, and then put the queen with them, and let her run into the hive with the bees.

I notice that some are complaining that the sections stick fast to the rests. Now, if they will have the strip of tin cut $\frac{1}{4}$ of an inch wider than usual, and then have the tinner turn the edges $\frac{1}{8}$ of an inch at a right angle, they will never be troubled

with the sections sticking, and then it strengthens the rests very much.

As far as I can learn, the most of the bees are dead in this region of the country.

Hoopeston, Ills.

Read at the Bee-Keepers' Congress, at New Orleans.

Bee-Keeping as a Pursuit.

ARTHUR TODD.

This subject may be regarded from two stand-points—that of the man who with income assured from other sources, pursues bee-keeping for its pleasure; and that of the man who, wishing to increase his slender income, or actually make an income, turns to bee-keeping with a view to profit on the capital and labor to be invested. But, as to the latter is denied none of the pleasures enjoyed by the former, it is from the latter stand-point alone that I will review the subject.

Bee-keeping is, strictly speaking, a branch of agriculture, and many a farmer is to-day getting a greater return from his investment in bees than that received from any of his other stock; but right here I say that bee-keeping as a pursuit has to-day become a "specialty." The man who enters upon this pursuit (leaving the question of capital aside) must be one endowed with physical and mental ability—a man with open eyes and ears, and a man for emergencies, prompt to do what is necessary at once, and one who is not easily discouraged.

The physical ability is required because bee-keeping demands real hard work—yes, back-aching work—not suitable to the sick ladies and gentlemen so often ill-advised to go into bee-keeping. The mental ability is required to keep the bee-keeper abreast of the times and its rapidly changing conditions. Bee-keeping is now a science, a study, and the conditions which govern one season, or colony of bees, will be completely changed for the next. Every stage in the life of a colony of bees requires to be understood. There must be no "guessing," and this will bring us to the cultivation of the habit of observation, and a disposition to hear all that one can upon the special subject.

Emergencies will occur needing heroic treatment, but the bee-keeper with mind and hand trained by experience and thoughtful consideration of his "specialty," will rise superior to any occasion, and when discouragement comes, as it inevitably will, in the words of the immortal Longfellow, "He will look not mournfully into the past, it comes not back again, but wisely improve the future for it is his."

Pleasure and profit go hand in hand, as a rule, in this specialty, although the former is not unalloyed by a liberal application of the "business end" of the little busy bee, and the latter by a recurrence of poor honey seasons. In nature is found both the beautiful and the sublime; in the hive both are constantly under the bee-keeper's eye, teaching him to look with amazement from "nature up to nature's God." As he views his hive, and sees the city grow, and population increase, the waxen walls, and stores well filled, the free-born citizen hurrying to and fro, each with his special task, outside of the thoughts of profit will come to the most unimpressible, thoughts of wonder and admiration for the works of that great Architect of the universe who said, "Let there be life and there was life."

The profits of bee-keeping are what? To many a one they hold out the hopes of "the glorious privilege of being independent;" and to obtain these profits the specialist gifted with the requisite mental and physical qualities, must be "the right man in the right place." He must have hives

of the movable-frame order. Moses Quinby wrote thus, in 1858: "There is not the least doubt, in my mind, that whoever realizes the greatest profit from his bees will have to retain the movable combs in some form;" and who of us will gainsay this to-day? Out of the many styles of movable-comb hives now in existence, the bee-keeper will select one best fitted for the business in which he means to engage, be it the production of comb or extracted honey, queen-rearing, bee-selling, or a combination of all.

The specialist who intends to rear bees for sale, will do well to employ that hive which will take the size and style of frame most in use in the district in which he resides. Interchangeability of parts is a grand secret of success, and the bee-keeper who can sell a colony of bees, or buy a colony, well knowing that each and every frame is usable in his own or his neighbors' hives, has made a step in the right direction. The main points in a good hive are, "Simplicity of construction, combining plenty of bee-space with perfect ease of manipulation."

The race of bees will next engage the specialist's attention. Study and experience, and also the actual line of business engaged in, will best decide this point. The black, the Italian, the Syrian, the Cyprian, and the Carniolan, alike have their votaries. At present, for all purposes of sale and honey-gathering, the Ligurian or Italian-Alp bee is the principal one in demand; but the very best race of bees will afford but little profit unless the queens are carefully looked after. As fast as signs of senility appear, these should be removed and their places supplied by younger and more vigorous queens. The apiarist for profit should not only rear queens, but know how, when and where to replace them. He should also know the requisites of a good queen, and how to judge of her progeny.

Pasture to the bee-keeper is everything; if that be poor, his returns will be poor; hence he should carefully examine his location. Districts vary greatly in their flora, and by a careful study of this question before locating, disappointment will be avoided. The bee-keeper should be a walking calendar of the flora of his neighborhood for miles around, then, as the honey comes pouring in, he can tell its source and label it accordingly. This knowledge will enable him to build up colonies, and follow the old advice, "Keep your colonies strong," so that when the honey does come, there are bees to gather it in.

The management of bees kept for profit will vary according to the object of the bee-keeper, whether it be the production of honey or the rearing of bees or queens. In running for honey alone, we have the swarming and the non-swarming methods. The experiences of good bee-men are so diversified that one is reminded of the old saying, "when doctors differ, the patient dies." The bee-man must strike out his own line of action suitable to his own special circumstances. In running for extracted honey, swarming is, to a great extent, controlled, for "Poverty maketh humble;" but I insist that the good bee-man will know the condition of each hive, and act accordingly.

The specialist is a man who reads, and although he may not get or use a single one of the many traps, or patent articles now offered, he should know all about them; for, at any moment, what he has read about these things may give him an idea the successful carrying out of which may help him over a difficulty. The capacity of the bee-keeper to attend to a certain number of colonies, be it greater or less, will have a great influence on the profits of the pursuit. As a pursuit, bee-keeping should not be entered into without careful thought and consideration as

to the capital required, the location, and the suitability of the employment to ones temperament. To-day it is possible for the intending bee keeper to serve an actual and willing apprenticeship before embarking in the business, in the yards of well-known and successful bee-masters. I need not dwell upon the advantages of this plan, for they are obvious.

To the enthusiast with but small experience, I would say, "Go slow!" Read the good bee-literature now so easy to be obtained, and never be above learning from others. Visit bee-keepers wherever you can enjoy the privilege, attend bee-conventions, and gradually a store of knowledge will be gathered upon which you will draw with profit later on.

Profitable bee-keeping as a pursuit is, to my mind, the out-come of the union of two great factors—"talent" and "tact;" for "talent is power, tact is skill; talent is wealth, tact is ready money; talent knows what to do, tact knows how to do it; talent makes the world wonder that it gets on so fast, tact excites astonishment that it gets on so fast; talent may

ment of 130 days. Six out of 106 colonies starved, but the remainder, with a few exceptions, are in good condition, although they have consumed much food. Three colonies are alive from the 87 which were in my bee-house that burned down on Jan. 25. This was a grievous loss, but by it I have gained much valuable information concerning the condition of my bees at that time of the year, as I got all the hives out before it had entirely burned down, and I could see the exact condition of all, which I will describe.

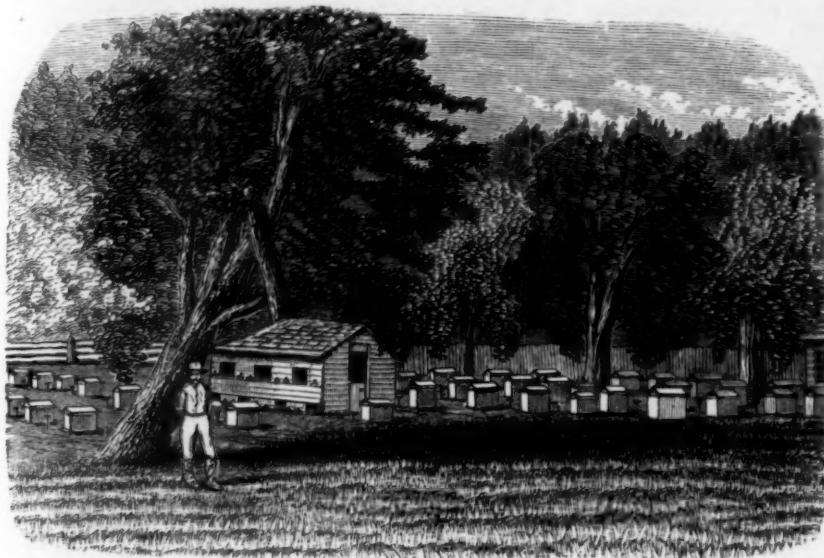
The 87 colonies were in fine condition before the fire, but from all appearances, the condensed smoke for three days in the bee-house, had driven the bees out of the hives upon the sawdust, which was on the floor and burned, thus leaving most of the hives without any bees in them; but in 40 hives there were more or less live bees, and they were put into another bee-house near by, and in a week from that time there were only 7 alive, and at present only 3 of them. I examined the most of the combs, and extracted the honey, and I found the following: Forty-eight colonies had more

benefit, but on the contrary, if I could control it, I would not have bees breed before March 1, in this latitude. I have experimented for the past 12 winters to find out how I could prevent my bees from breeding in winter, and at the same time have them warm enough to winter well, but as yet I have not entirely overcome the difficulty, although I have come somewhat nearer to a successful method of wintering my bees. I have tried out-door and in-door wintering; chaff-packing and snow covering; frame-spreading, and holes through the combs for passage-ways; upper and lower ventilation; side-hill and above-ground bee-houses, and for the past two winter I have wintered part of my bees in a cave; i. e., a hole in the ground 7 feet deep, and 2 feet of earth over the roof, a ventilating pipe under ground, and one with an elbow through the top to regulate the temperature in the fall and towards spring. From what I have observed with this cave, I believe that it is the best, cheapest and safest way to winter bees in our northern climate. The outside temperature during the two winters, for over three months in the coldest weather, did not affect the inside of this cave more than 2 degrees; 40 degrees above zero was what the thermometer indicated inside of the cave when the temperature was 35 degrees below zero on the outside; and at 35 degrees above zero outside, for six days, the inside temperature was 42 degrees above zero.

The 60 colonies which were wintered in this cave came through in fine condition, excepting 2 which starved. They were put in on Nov. 17, 1884, without any preparation, excepting that an 8-penny nail was put under each corner between the honey-board and the hive. Also the bees that I had in the cave last winter came through nicely. Hereafter I intend to winter all of my bees in caves, regardless of hibernation, pollen, and brood-rearing in confinement.

As Mr. Doolittle has given such an interesting article on "The temperature of bees in winter," page 181, I will give my observations of the movements of the cluster in the hive in winter confinement. Last fall I put 40 colonies in a side-hill bee-house, making a row 3 tiers high around the inside of the house. They were prepared in the same manner as those in the cave, except that 7 of them were stored among the others without anything over the frames, and the entrances were also left wide open. One of the 7 was placed near the door on the top row, and one on top at a back corner; the other 5 colonies were in the middle and lower tiers, with a space 1½ inches wide between the frames and the hive above them. I could not see the movements of the 5, but I did see the 2 on top every time I entered the bee-house. Before this I had an idea that the cluster would stay in one place as long as they had plenty of food, but I discovered that it was otherwise.

During the first month the cluster staid in one place near the centre of the hive, but after that (I wish that Mr. Clarke could have seen their movements, for it surely would have cured him of bee-hibernation) they commenced to move very slowly to the left side and toward the back part, across to the right side, thence toward the front and again to the centre, and then made the same round till I put them out on the summer stands. They were very quiet all the time, but when my breath would come in contact with them, they were instantly upon the alert. A small part of the cluster was always on top of the frames. They consumed but little honey, as the honey all around the outside was still sealed when I put them out. The colony on the back corner acted nearly like the one near the door. The 7 colonies came through in good condition, but some of them consumed more food than others,



APIARY OF HAMBAUGH & STONE, SPRING, ILL.

obtain a living, but tact will make one. Talent convinces, tact converts; talent is an honor to the profession, tact has the knack of slipping into good places, and keeping them; it seems to know every thing without learning anything; it has no left hand, no deaf ear, no blind side, with a full knowledge of the Pythagorean doctrine, 'that a man ought rather to be silent, or say something better than silence.'

I submit these remarks to my fellow bee-keepers, being painfully conscious of many shortcomings from the high standard of excellence that man should attain to, who in these days goes into "bee-keeping as a pursuit."

Germantown, Pa.

For the American Bee Journal

How my Bees have Wintered, etc.

17—C. THEILMANN, (100—195).

Another long and severe winter for the bees closed here on March 26, which was the first day warm enough for the bees to have a cleansing flight. It was 54 degrees above zero at noon in the shade, and the bees enjoyed it very much, after a confine-

or less sealed brood, 5 of them had brood in 5 frames, 2 had brood in 4 frames, and 17 had more or less eggs and larvae in the combs; the rest had neither brood nor eggs. All the combs were nice and clean, and there were no signs of disease. The most of the time the temperature was 40 degrees above zero, though a number of times in January it fell to 30 and 28 degrees above, when the temperature was at 35 and 38 degrees below zero on the outside.

I have wintered part of my bees for three years in the same bee-house, with about the same temperature, and apparently the same condition, with but little loss; but if brood-rearing were the cause of bee-diar-rhea, as some writers claim, I would probably have lost over two-thirds of my bees every year, for this sad experience shows that breeding had commenced before Jan. 15, and as long as there is any food in the hives, they will surely keep at it all winter; it proves, too, that it is not necessary for a young bee to have a cleansing flight soon after it emerges from the cell; i. e., within a week or so; for, if it was true, every colony that would rear brood for 75 to 85 days would be of no value in the spring—the old bees would be worn out and the young ones would be dead.

I do not want to be understood to say that brood-rearing in confinement is any

but not as much as the other remaining 39, and they had but little brood—only one little patch in each hive. The temperature was 40° above zero during the first month, and then it fell to 30° and 28° above, and continued so until within four days before I put them out. Four out of the 40 starved; they had consumed far more honey than those in the cave, and are not as strong in numbers, and some of them showed signs of diarrhea. The 46 colonies were somewhat disturbed when taking in and out the 40 colonies from the burned bee-house.

Nearly all the bees in this vicinity that were left on the summer stands are dead. I find that sugar syrup is a better winter food than honey, as the bees do not eat as much of it on account of not liking it so well. I have experimented in this in hunting bees; they would leave the sugar syrup and go to the flowers, but they would not leave the honey and do so. This may account for the slim bodies of bees which are wintered on sugar syrup.

Thielmanton, Minn.

For the American Bee Journal.

The Imperfections of Nature.

ALLEN PRINGLE.

On page 166, Mr. Joshua Bull takes exception to some of my positions in a previous article on page 75. Mr. B. considers Nature to be quite perfect in her laws, operations and methods, and looks upon the honey-bee, especially, as being perfectly unerring in its instincts and works.

In my article referred to, I gave one instance out of many which have come under my observation, showing the erring instinct of the honey-bee. From the facts given, Mr. B. draws a conclusion just opposite to mine; but he proves himself a careless reader. I did not say what Mr. B. ascribes to me, viz: that the old queen that was being prematurely superseded in the spring, was "in the dumps in the corner" before the workers commenced the queen-cells. On the contrary, I said that it was after the queen-cells were capped over that the old queen was "in the dumps," as we certainly would expect her to be under such circumstances. When the snow still covered the ground, and the mercury was down near the freezing point, a young queen, finding rivals nearly hatched out in her own domicile, would hardly take the matter philosophically any more than the old one. I repeat, this was a foolish, short-sighted, and suicidal piece of business on the part of those bees, amply demonstrating imperfect instinct.

Mr. Bull thinks that I have "overreached myself, and have gone wide of the mark" when I assert that "Nature abounds in monstrosities and imperfections," and that "we are continually improving upon her works and methods." He admonishes me in a most friendly and fatherly manner not to be "too hasty in my conclusions." Now, I beg to assure Mr. Bull that the above conclusion has been arrived at deliberately after 20 or 30 years of observation and study. When a critic says, "Come and let us reason together," as Mr. B. does, I get on friendly terms with such an opponent at once, for "reason" is my talisman and guiding star. Not all, however, who appeal to Reason, are either able to follow her, or willing to loyally abide by her decisions.

Mr. Bull says if any one can show him wherein we are "continually improving upon Nature's works and methods," he will then "render honor to whom honor is due." He wants to know "what these improvements are," and what the imperfections of Nature are. Now, the whole space of a score of bee-papers would not suffice to give Mr. B. what he calls for here; but just to give him a glimmer of

light on this great subject, I may be permitted to bring to his notice a few facts.

First, as to the improvements: We will glance at some instances in agriculture and horticulture as well as apiculture. It is an incontrovertible fact that bees in their natural and wild state, domiciled in hollow trees, rotten logs, crevices of the rocks, etc., will sometimes swarm 3 or 4 times in the season, both seriously weakening the parent colonies and committing the late swarms to almost certain starvation during the following winter, as the late swarms are frequently found in their natural abodes, starved to death, without a particle of honey. Now, this is a case of the bees following their instinct unmolested. It is Nature's "method;" but man, with his reason superior to instinct, has improved upon this method by preventing the after-swarms or uniting them and thus saving all. In many ways does the intelligent apiarist modify and improve the instincts and methods of the bees by judicious breeding and manipulation.

If we look into apiculture and horticulture, the instances of the intelligence of man improving upon the methods of Nature are obvious on every hand. Look, for instance, at the different kinds of our splendid horses under domestication, all derived from a single, original inferior type of horse. Look also at the variety and superiority of our sheep at present under domestication. In referring to what has been accomplished by expert breeders in improving sheep, Lord Somerville says: "It would seem as if they had chalked out upon a wall a form perfect in itself, and then had given it existence;" while Youatt remarks that the breeder has power "not only to modify the character of his flock, but to change it altogether." It is the general opinion of naturalists that all the different breeds of pigeons have been developed from the rock-pigeon (*Columba livia*). In the department of horticulture, we may note the many kinds of apples which we now have, so palatable to the taste; and these have, all through the application of this science and art by man, been derived from one original, inferior form of apple. So also of potatoes, and to some extent of the grains. If these examples are not improvements by man upon the methods of Nature, language has no meaning.

The "gad-fly" deposits its eggs upon the limbs, shoulders, and flanks of our horses, whence they find their way into the animals' stomachs, where they develop into bots, which frequently cause the death of our most valuable horses. Only the other day I saw a fine broodmare, in her prime, die in great agony, of bots, after two or three days' illness. We made a post-mortem examination, and found the passage-way between the duodenum and colon completely obstructed by these creatures, and the stomach distended nearly to bursting, not being able to pass its contents through the blockade of bots. Four years ago I witnessed another fine young horse drop in the harness and die in less than five minutes. On examination we found the stomach about half full of bots, and the mucous membrane nearly all gone, the stomach being actually perforated to the outside in two places. This, Mr. B., is Nature's method of doing business. This is the way she takes to propagate the "gad-fly" which follows its instinct most faithfully in depositing its eggs where the horse will lick them into its stomach. It is, no doubt, a good method, and a perfect method to propagate the fly, but it is rather hard on the poor animal and its owner. At any rate the latter decidedly objects to such a method, and sets himself to thwart such "perfection" (?) in Nature! He improves upon Nature by either destroying the gad-fly, removing the eggs after they

are deposited, or giving the grub a poisonous dose in the stomach after it is hatched.

The apple-tree borer, which often destroys our choicest trees, is hatched in the bark from an egg deposited by the parent beetle in strict accordance with its natural instincts. This is Nature's method of propagating the borer, but it is a bad one, and man applies science and thwarts Nature again. He improves upon her method by improving the "knit" out of existence with soap-suds or weak lye applied to the tree. There are some half-dozen parasites (including the tape-worm) which naturally infest the human body and prey upon it. This is another of Nature's methods; and as Nature is all right and perfect, Mr. B., to be consistent, ought not to attempt to dislodge any of these parasitic friends which might happen to take up quarters with him or in him. Some 10 or 12 years ago the "Colorado potato beetle," the natural food of which consists of the vines of the potato, either wild or domesticated, started from its haunts out near the Rocky Mountains, on a pilgrimage eastward, and struck us here in Canada about seven years ago, since which, every year, we have been fighting "his beetleship" either with turkey-gobblers or Paris green, in order to raise a potato all. This is another of Nature's choice methods. The beetle lives, multiplies, and flourishes admirably on our choicest vines; but according to Mr. Bull's philosophy, we ought to let him sit up there on our potatoes and enjoy himself without molestation.

Talk of Nature being perfect! Why, there is scarcely an animal or plant in the whole two kingdoms of Nature in which some imperfection cannot be noted. Animals and plants abound with imperfect and useless organs, mostly rudimentary and without any function—such as eyes, legs, lungs, mammary glands, muscles, teeth, wings, pistils, stamens, etc. There are animals that live in the dark with blind eyes; the dugong has tusks that never cut through the gums; calves have teeth in the upper jaw that never cut; the Guinea pig has teeth that are shed before it is born; the boa-constrictor has little bones under the skin towards the tail which are the mere rudiments of hind legs and a pelvis; there are whales and fishes with useless bones in the hinder parts of their bodies, which seem to be either intended for, or the remains of, hind legs; in the "Anguis" worm there is a set of shoulder-bones in the body, but no legs attached to them; then there are the "dangling horns" in some cattle, and the "bastard wing" in some birds, and numerous other imperfect and useless organs, had I time and space to enumerate them.

Selby, Ont.

For the American Bee Journal.

Disastrous Effects of Honey-Dew.

7—A. D. STOCKING, (4).

I can now make my report as to wintering. I think that the past winter has been the most disastrous one to bee-keepers that has ever been experienced in this country, and there will be a great deal of speculation as to the causes of the great losses, but I believe that if a careful examination and study of the conditions and surroundings are made, that a satisfactory solution to the problem will be arrived at; and I fully believe that where the following conditions existed, that the losses have been comparatively light, considering the extreme severity of the winter; viz: where the hives were full of bees, plenty of good spring honey or sugar syrup for stores, and where they were kept dry and protected with chaff cush-

ions or other absorbents over the brood-frames. I wish that those whose bees were put into winter quarters under all of these conditions, would report as to the result, and also where they were wintered; also, that all who have met with severe losses, would report the extent of their losses, the manner of wintering, the condition the bees were in in the fall, and the kind of stores that the bees had to winter on. If all would report, stating all the particulars, it would be of benefit in arriving at the solution of this all-important question.

My losses have been extremely heavy, having but 4 colonies left, and they are rather weak; still, I think that I can account for it all. Heretofore my losses have been very light. My bees had all the conditions I have mentioned, but during last August and September they gathered a quantity of honey-dew which was mostly stored in the centre of the brood-frames, and which would be the first stores consumed. If I could have extracted all the honey-dew and fed sugar syrup, as I ought to have done, I think that my losses would have been comparatively light; but owing to poor health and lack of means to buy sugar, I could not do so, and so I had to take my chances. Upon examining my bees in the first week of January, after the first thaw, they appeared to be all right, showing no signs of diarrhea, and but few dead bees. There was not another chance to examine them until March 1, when I found 39 dead colonies, which, I think, was owing to its being so cold that they could not move to get the honey, as there was but little signs of diarrhea. The balance of them seemed to be badly affected, and dwindled very fast. I am satisfied that if my bees had had good spring honey or sugar syrup, nearly all of them would have survived the winter. They were wintered on the summer stands, most of the hives containing chaff cushions, and passage-ways over the brood-frames, the same as I have always wintered my bees. They all left plenty of honey. My losses are discouraging, but I am not discouraged. I have a nice lot of combs to build up on, and a quantity of nice honey to extract.

•Ligonier, 6 Ind.

Local Convention Directory.

1885. Time and place of Meeting.

- May 2.—Central Illinois, at Jacksonville, Ill.
- Wm. Camm, Sec., Murrayville, Ill.
- May 4.—Linwood, Wis., at Rock Elm Centre, Wis.
- B. Thomson, Sec., Waverly, Wis.
- May 5.—Western Michigan, at Fremont, Mich.
- F. S. Cover, Sec., Coopersville, Mich.
- May 5.—W. New York and N. Pa., at Cuba, N. Y.
- W. A. Shewman, Sec., Randolph, N. Y.
- May 5, 6.—Western Maine, at Mechanic Falls, Me.
- F. D. Wellcome, Sec., Poland, Me.
- May 7.—Progressive, at Bushnell, Ills.
- J. G. Norton, Sec., Macomb, Ills.
- May 7, 8.—Texas State, at McKinney, Tex.
- W. R. Howard, Sec., Kingston, Tex.
- May 9.—Northern Ohio, at Norwalk, O.
- H. R. Boardman, Sec., E. Townsend, O.
- May 12.—Keystone, at Scranton, Pa.
- A. A. Davis, Sec., Clark's Green, Pa.
- May 12.—Cortland Union, at Cortland, N. Y.
- W. H. Beach, Sec., Cortland, N. Y.
- May 19.—N. W. Ills., and S. W. Wis., at Davis, Ills.
- Jonathan Stewart, Sec., Rock City, Ill.
- May 28.—Mahoning Valley, at Newton Falls, O.
- E. W. Turner, Sec., Newton Falls, O.
- May 28.—N. Mich. Picnic, near McBride, Mich.
- F. A. Palmer, Sec., McBride, Mich.
- May 29.—Haldimand, Ont., at Nelles' Corners, Ont.
- E. C. Campbell, Sec.
- June 19.—Willamette Valley, at La Fayette, Oreg.
- E. J. Hadley, Sec.
- Dec. 8-10.—Michigan State, at Detroit, Mich.
- H. D. Cutting, Sec., Clinton, Mich.

✂ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Good Honey-Season Anticipated.—Nathan Davis, Wyckoff, O. Kans., on April 20, 1885, writes:

Last spring I began with 30 colonies of bees, and during the season I increased them to 60 colonies by natural swarming. I have not suffered as heavy a loss during the past winter as some of the bee-keepers in Kansas. I wintered my bees on the summer stands. I have now 30 colonies in good condition, the majority of the others having died from starvation. Bees stored no surplus honey last season. The prospects never were better for a good honey season than at present. There are but few bees kept in this locality. Fruit trees will be in bloom in a few days. I have been sowing all kinds of clover; the mellilot or sweet clover does splendidly here, and it blooms when there is nothing else for the bees to work on. I will try to save a quantity of seed from it the coming season.

Report, from R. B. Oldt, (100—98), Ludington, Mich., on April 15, 1885:

My bees had good flights on April 3 and 6, after a confinement of five months and five days. They could have withstood being confined for a month longer, as they came out as clean and bright as they were last fall when I put them in. I think that if any close observing bee-keepers could see my bees now, they would have no difficulty in settling the wintering problem. I lost 2 colonies by starvation. Who can beat that in 43° north latitude?

No Natural Pollen Yet.—O. J. Hall, Union, Mich., on April 18, 1885, says:

Last fall I put 75 colonies of bees into winter quarters, and I have lost 2 of them. I removed them from the cellar on March 31 and April 1; some of them have died since, some are weak, some are medium, and some are strong. No natural pollen has been brought in yet. This is my ninth season in the bee-business.

Bees Nearly all Dead.—J. G. Norton, Macomb, Ills., on April 16, 1885, writes thus:

The winter is over, and as I hear of the general heavy losses of bees, I will report a few from this locality. One bee-keeper lost 59 out of 69; another 100 out of 125; another 80 out of 89; another 40 out of 42; another 90 out of 100; and many others owning from 5 to 30 have lost all; in fact, it is a hard matter to find any bees left in this part of the State, where, last fall, they could be numbered by the thousand colonies. I have been very well satisfied with my success, although I cannot report "no loss." I packed 36 colonies with chaff last fall, and I have lost 3 of them, one being queenless, and the other 2 having been very light in bees last fall; all the rest are in very good condition. Many reasons are given for the great loss of bees, but wherever I see a colony that had plenty of stores last fall, and the sides and the top of the hive packed with chaff or sawdust, allowing no moisture to remain among the bees, there I find a good colony to-day. I am, however, inclined to consider the pollen theory; but from experience and thorough investigation, I am not yet ready to take any interest in hibernation.

Successful Wintering.—David Wilcox, Orford, N. H., on April 13, 1885, writes thus:

I am very glad to be able to report that my bees are in fine condition. I wintered my bees in the New England No. 7 hive. I sold all my surplus honey for 25 cents per lb. I packed my bees as described by Mr. H. D. Davis, on page 234, and of the 44 colonies that I had last fall, not one was lost during the past severe winter. The combs are as bright, and the honey is as fresh as it was last fall. Two colonies that were second-swarms wintered all right, which convinces me that any colony that is well packed, and that has plenty of stores, will winter safely in a good hive. I do not think that my bees consumed more than half their stores during the past winter. I saw one frame filled with honey from top to bottom on both sides. I am very much gratified with my success.

Cider for Winter Stores.—E. Henkle, Washington C. H., Ohio, on April 16, 1885, reports as follows:

Having never seen anything in the BEE JOURNAL from this part of Ohio, I consider it my duty to give at least a small report. I started in the winter with 52 colonies of bees, all in good condition, well packed with chaff and leaf cushions, and well sheltered from rain, sleet and snow on the summer stands. On Feb. 3, they had a nice flight, and all seemed to be doing well; then it froze solid again until Feb. 28, when they had another flight, but at this time they had the worst attack of bee-diarrhea that I have ever seen. They spotted the hives and everything that they touched, and they have been dwindling and dying ever since. I have lost 14 colonies, all leaving plenty of honey in their hives. Last season was a very poor one for honey in this part of the State; we had only a 3-weeks' honey-flow from white clover, when a drouth cut off the crop. We have to depend upon white clover, as we have no basswood in this part of the State. About the middle of August the bees began working on the apples and in the cider-mills, and continued it as long as there were any apples out. They must have stored quite a quantity of apple-jack in that time, and this was the first food they got when it became warm enough for them to take nourishment; which, I think, accounts for their having the diarrhea. In 1880 we had just such a season as that of last year, and I lost every one of my bees. I then thought that cider was the cause of the loss, and I still hold that view. I think that the rest of my bees will survive, as the maple trees are in bloom, and the bees are carrying in pollen when it is warm enough for them to fly. I have 11 acres of Alsike clover for them to work on next summer, and one acre of mellilot.

Neglected Bees, etc.—6—Wm. Malone, (38—9), Oakley, Iowa, on April 9, 1885, writes as follows:

On page 133, I said that out of 231 colonies of bees, in this township, I did not think that 50 would live through the winter, but I can find only 18 alive now, and 9 of them are mine. Now, that our bees are dead, we are looking for the cause of their death; some say that cider killed the bees, others say that it was honey-dew, but I say that it was neglect that killed them in this part of Iowa. I have examined a great many of the dead colonies, and in every case the bees had starved; in many cases honey was in the same same comb, but none in reach of the cluster. In the summer of 1882, we had three times as much honey-dew as we had last year, and in August, too, and our bees

wintered splendidly; last year our honeydew was gathered in June and July, and our bees have all died. The trouble was neglect to prepare them as we should. The fall honey-flow was just enough to keep the queens laying until late in the fall, and the bees were in splendid condition for winter, as far as young bees was concerned, and the most of the colonies had honey enough to winter them if it had been within reach of the cluster. If the winter had been an open one, so the bees could have moved from one part of the hive to the other, after the honey, they would have wintered all right; or if the honey that was in 10 frames had been in 5, our bees would have been alive to-day. I would like to have those who have lost bees tell if in any of the hives there was honey where the dead bees were. It appears to me that the bees run out of honey when it was too cold for them to bring honey to the brood-nest, and I am satisfied that starvation has been the cause of the loss of 100 colonies where I died from diarrhea. The following is a description of my reversible-frame device which I intend to use during the coming season: Make an oblong wire ring $1\frac{1}{2}$ inches one way and $\frac{1}{2}$ of an inch the other; solder a wire in the centre on each side of the ring. The wires must be half the length of the end-bars, with a $\frac{1}{4}$ -inch square turn at the lower end to enter a hole made in the end-bar edgewise, so that when the device is in place, the end-bars will be between the wires. One-half of the wire ring will answer for the bearing, and the other half for a rest on the top-bar, which, when reversed, will serve as the bearing.

Good Success in Wintering.—A. L. Refsnider, Greene, δ Iowa, on April 20, 1885, writes as follows:

The loss of bees in this section is quite heavy, but mine have wintered splendidly. I had them on the summer stands in double-walled hives, packed with chaff and covered with snow. I had 14 colonies in the fall, and I now have 13 in good condition. The one I lost starved. My neighbor, Mr. Shirer, has not lost any of his bees. He had 9 colonies in the fall, and they are in good condition now. He also wintered them on the summer stands in the Quinby hive packed with chaff. Judging from reports from the southern part of this State, and other States, I think that we had remarkable success in wintering our bees.

Report, from E. France & Son, Platteville, δ Wis., on April 20, 1885:

Last fall we put into winter quarters 455 colonies of bees in 6 apiaries. On Nov. 15, 1884, they had a good flight, and on March 9, 1885, they had another flight, with the mercury at 48° above zero. They had no flight of any consequence between those dates. Forty-six days of that time the mercury was down to zero and below, the coldest being 34° below zero. We began to examine them on March 9, finishing on March 31, and we found 388 colonies alive. The second examination was finished on April 15, and we found 374 colonies alive. The first pollen was brought in to-day. We think that during the past winter we learned something about wintering bees. We winter all of our bees outdoors.

Spring Dwindling Feared.—L. Highbarger, Adeline, δ Ills., on April 17, 1885, writes:

Bees are faring very poorly on account of the past hard winter, and they are having a bad spring. If such weather continues much longer, I apprehend that there will be much "spring dwindling," as bad wintering always causes it.

An "Eden" for Bee-Keepers.—A. W. Osburn, of Cuba, on April 16, 1885, sends the following condolence to Northern bee-keepers:

When I read in the BEE JOURNAL of the great losses of bees among my fellow bee-keepers in the North, during the past winter, I feel like offering my heartfelt sympathy, and wishing that some of them would conclude to start anew in this country, where there is no winter, and plenty of honey during 8 months out of the 12; and for those 4 remaining months, all that is needed is a few pounds of sealed honey in the hive, and the whole year goes by with no hibernation or bee-diarrhea.

Using Depopulated Hives.—Mrs. M. R. Brown, Morse, δ Iowa, enquires as follows as to the advisability of using hives in which bees have winter-killed:

I wish to ask if it would be advisable to hive bees in hives where bees have winter-killed. The combs are nice and bright, and some of the hives have a good supply of honey in them. My husband kept bees for six years, and always had good success; but he died last October, and no attention was paid to the bees, so they were left out-doors all winter. Out of 16 good colonies there are but 5 left.

[Hives in which bees have simply "winter-killed" will be harmless. The bees will soon clean them all up, and do it better than you can.—ED.]

Everything Promises Well.—W. S. Hart, (117-142), New Smyrna, δ Fla., on April 13, 1885, writes as follows:

I expect to be able to make a good report for this part of Florida, this season, as we now have a large number of bees in this immediate vicinity, and everything promises well for a large crop of honey. The bees commenced to swarm much later than usual this spring, but they are now coming out freely, and all are large swarms. The orange bloom is now in its prime, and is full a month later than two years ago. The trees are blossoming very full, and the bees are having a "high old time" among them.

Good Clover Prospect.—Dr. N. P. Allen, Smith's Grove, δ Ky., on April 16, 1885, writes as follows:

I have just examined my bees, and I found them in good condition. I have lost only 2 out of 50 colonies. Peach trees are just blooming, and the clover prospect is good for a fine harvest. From 1-3 to $\frac{1}{2}$ of the bees are dead in Southern Kentucky, caused by a too free use of the extractor and a failure in the fall harvest, leaving many colonies without sufficient stores; and the bee-keepers failed to protect their bees from the winter's blasts; but with a good honey season, we will be able to harvest an average crop of honey.

Bees Almost Extinct.—Peter Billing, Pawnee City, δ Nebr., on April 18, 1885, writes as follows:

The saying, "Evils will cure themselves when human skill seems to fail," has verified itself again in our midst during the past winter. Bees were getting pretty thick in this vicinity, but the past winter has thinned them out. One of my neighbors said that he expected to lose half of his bees, but as he only saved 4 colonies out of 40, he lost more than he anticipated. Out of 193 colonies, last fall, myself and eight other neighbors have lost

175. It is also to be kept in view, that those colonies still living are nothing more than nuclei. A great many more bee-keepers having from 2 colonies upwards, might be mentioned, which, as a rule, lost all. The shortness of winter stores, the severe winter, and the lack of care, are, I think, the causes of loss.

Convention Notices.

The next annual meeting of the Keystone Bee-Keepers' Association will be held in the Court House in Scranton, Pa., at 10 a. m. and 1.30 p. m. on May 12, 1885. At the morning session, after the President's address, which will include a report as delegate to the Bee-Keepers' Congress at the World's Fair in Feb. last, the annual election of officers will take place. While the Association is but just commencing its third year, we congratulate ourselves in having a working membership of over 50; yet there remains much to be accomplished, and we trust that all who keep bees, whether for pleasure or profit, will attend this meeting.

ARTHUR A. DAVIS, Sec.

The ninth Quarterly Session of the Western Maine Bee-Keepers' Association, will be held at the residence of Mr. Charles Bonney, Mechanic Falls, Me., on May 5 and 6, 1885. The opening session will be on Tuesday, May 5, at 1 p. m. Parties desiring to display their goods and wares should send them to the Secretary, at Mechanic Falls, Me., who will place them on exhibition and care for them free of charge. This is the most important meeting of the year. All are cordially invited to be present.

F. D. WELLCOME, Sec.

The Northern Ohio Bee-Keepers' Association will hold their annual meeting in the Council Chamber, at Norwalk, O., on Saturday, May 9, 1885. Subjects of immediate practical value will be discussed. Officers will be elected for the ensuing year. No one engaged in the production of honey can afford to be absent. H. R. BOARDMAN, Sec.

The Texas State Bee-keepers' Association will be held on Thursday and Friday, May 7 and 8, 1885, at the apiary of Judge W. H. Andrews, at McKinney, Tex. All interested in the advancement of apiculture, are earnestly requested to be present and make this a memorable meeting of the Association.

W. R. HOWARD, Sec.

The Progressive Bee-Keepers' Association of Western Illinois will meet in Bushnell, Ill., on Thursday, May 7, 1885. Let every bee-keeper who can, be present and enjoy the meeting. J. G. NORTON, Sec.

The Bee-Keepers of Western Michigan will hold their spring meeting on May 5, 1885, at Fremont, Mich. All are invited to attend. F. S. COVEY, Sec.

The Willamette Valley Bee-Keepers' Association will hold its second meeting at La Fayette, Oregon, on the third Tuesday in June, 1885. All who are interested are invited to attend. E. J. HADLEY, Sec.

The Central Illinois Bee-Keepers' Association will meet at Jacksonville, Ill., at 10 a. m., on Saturday, May 2, 1885.

WM. CAMM, Sec.

The spring meeting of the Cortland Union Bee-Keepers' Association will be held in Cortland, N. Y., on May 12, 1885.

W. H. BEACH, Sec.

The Mahoning Valley Bee-Keepers' Association, will hold its next meeting at Newton Falls, Ohio, on Thursday, May 28, 1885.

E. W. TURNER, Sec.

The second annual meeting of the Western N. Y. and Northern Pa. Bee-Keepers' Association will be held at Cuba, N. Y., on Tuesday, May 5, 1885.

W. A. SHEWMAN, Sec.

Special Notices.

We want one number each of the BEE JOURNAL of August, 1896—February, 1897. Any one having them to spare will please send a Postal Card. We will pay 50 cents for one copy of each of the two numbers.

Sample Copies of the BEE JOURNAL will be sent FREE upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview by sending the names to this office.

Preserve your papers for reference. If you have not got a Binder we will mail you one for 75 cents, or you can have one FREE if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

To create Honey Markets in every village, town and city, wide-awake honey producers should get the Leaflets "Why Eat Honey" (only 50 cents per 100), or else the pamphlets on "Honey as Food and Medicine," and scatter them plentifully, and the result will be a DEMAND for all of their crops at remunerative prices. "Honey as Food and Medicine" are sold at the following prices:

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To give away a copy of "Honey as Food and Medicine" to every one who buys a package of honey, will sell almost any quantity of it.

The Farmer's Account Book contains 166 pages, printed on writing paper, ruled and bound, and the price is \$3.00. We will club it and the Weekly BEE JOURNAL for a year for \$4.00. If you have already sent us \$2.00 for the Weekly BEE JOURNAL for a year, we will send the Book for another \$2.00, making \$4.00 in all. If you want it sent by mail, add 20 cents for postage.

For two subscribers for the Weekly BEE JOURNAL (or 8 for the Monthly) for one year, we will present a Pocket Dictionary, and send it by mail, postpaid.

Our rates for two or more copies of the book, "Bees and Honey," may be found on the Book List on the second page of this paper. Also wholesale rates on all books where they are purchased "to sell again."

Advertisements.

FOR MOCKING BIRDS, TEXAS RED BIRDS, Rose-Breast Grosbeaks and German Canaries at reasonable prices, address on postal card, W. D. BALL, Columbia City, Whitley County, Ind. 16A2t

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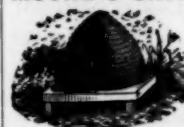
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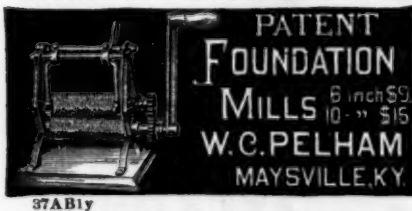
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